

REMARKS

Claims 1-20 are pending in the application. Claims 1-10 stand rejected. Claims 11-20 are withdrawn from consideration on the basis of an election deemed by the Examiner to have been made by the Applicant.

Election/Restriction

In the Amendment filed on October 3, 2005, Applicant amended claims 1-10 so that they were directed to the subject matter originally claimed, namely a vehicle with a door closing apparatus. Applicant also added new claims 11-20, which are directed to the door closing apparatus itself. The Examiner has held these new claims withdrawn from consideration by virtue of an election constructively made by the Applicant. Given the Examiner's restriction requirement, the claims are listed as "withdrawn." Applicant will defer canceling these claims and filing them in a divisional application, while reserving all rights under 35 U.S.C. § 121, until allowable subject matter is found.

Drawings

The Examiner objects to the drawings because the previous correction to Fig. 6 was made to an informal drawing. Applicant will add a formal drawing with the corrections.

Claim Rejections - 35 U.S.C. § 102

Claims 1-4, 9 and 10 are rejected under 35 U.S.C. § 102(e) as being anticipated by Cleland et al (U.S. 2003/0030299). This rejection is traversed for at least the following reasons.

The Invention

As previously noted, the subject matter of the present invention is disclosed in accordance with embodiments as illustrated in Figs. 1-8, particularly Fig. 6. The invention concerns a **door-opening/closing apparatus** for a vehicle having:

- (1) a **door movement detection unit** that detects a closing movement of the door and generates a movement detection output;
- (2) a **judgment unit** that judges whether the door is attempted to be closed and generates a closing attempt output; and

(3) a **motor control unit** that responds to two express and mandatory conditions, (a) output of the door movement detection unit and (b) output of the judgment unit, and as a result of these two mandatory conditions, controls the driving unit to automatically close the door.

With respect to the non-limiting and exemplary embodiment in Fig. 6 and the disclosed operation of that embodiment as explained at pages 10 and 11 with respect to the flowchart in Fig. 8, the **door movement detection unit** corresponds to the position detection switch 4 (page 7, lines 20-22) in combination with the control unit 6. As explained at page 10, lines 18-21, the control unit 6 counts pulses from the position detection switch 4 and, if a particular number is counted, checks the sensor 5 at step S1. In this manner, it is the combination of hardware and software in the control unit 6, serving as an active and intelligent component and not merely a passive sensor, which can detect the actual closing movement of the door in the closing direction.

Similarly, with respect to the non-limiting and exemplary embodiment in Fig. 6 and the disclosed operation of that embodiment as explained at pages 10 and 11 with respect to the flowchart in Fig. 8, the **judgment unit** can correspond to electrostatic switch 5, which detects the touching of the vehicle by a person, as disclosed at page 7, lines 23-25, in combination with the control unit 6, since it is the control unit 6 that “judges that the door 2 is attempted to be closed,” as expressly recited at page 10, line 25. As explained at pages 11-12, the switch 5 also may be a temperature sensor, electrostatic switch or vibration sensor. However, as is clear from the disclosure of the application, a judgment as to whether an attempt is made to close the door is determined by the combination of hardware and software in control unit 6, serving as an active and intelligent component, in response to a variety of passive sensors.

The **motor control unit** corresponds to the combination of hardware and software in control unit 6 that processes the output from (a) the door movement detection unit and (b) the judgment unit, and provides control signals to a door opening/closing apparatus 7 and/or a closer 8, as disclosed at page 7, line 25-page 8, line 3. Both outputs are necessary to have the door automatically closed, for very clear safety reasons.

In operation, as explained beginning at page 8, line 9, particularly at page 9, line 12, with regard to a closing command, the process illustrated in Fig. 8 and explained at page 10, lines 14- page 11, line 9, would be followed. Specifically, as a first mandatory condition, if the door moves in a closing direction, the control unit 6 starts counting the number of pulses input from the position detector switch 4. If a predetermined number of pulses is input to the control unit 6 (S1), the control unit checks whether the electrostatic switch 5 is in an ON state (step S2), as a second mandatory condition. The electrostatic switch would be in the ON state where a portion of the door 2 is pushed and the control unit judges that the door is **attempted to be closed** by the user. Then the door-opening/closing apparatus 7 operates to close the door in step S3. However, if the door 2 moves in the closing direction by some force, the door 2 does not close by itself unless the user touches the electrostatic switch 5, indicating an acceptable **attempt to close the door**. As explained, this prevents inadvertent operation, as by a child.

Cleland et al

The Examiner has revised his analysis and now asserts that the structure in Fig. 15 that corresponds to the limitations of claim 1 include:

- a stop structure 204 and door position sensor 506 (see paragraphs [0111] and [0117]) as corresponding to the claimed **door movement detection unit**, and
- a user input section 512, in the form of a control panel 514 and remote device 522 (see paragraphs [0125]-[0127]) as corresponding to the claimed **judgment unit**.

As is clear from the structure in Cleland et al that is identified by the Examiner, there is no control unit asserted to be operating in combination with the stop structure and position sensor 506 that can detect movement of the door. Even if the Examiner asserts that these components do operate in conjunction with the microprocessor 502 in Fig. 15 to detect door movement, there still would be no operation in response to a door movement detection unit and judgment unit to operate the drive unit to close the door.

As to the **judgment unit**, the claim expressly requires determination of an attempt to close the door. The claim is not limited to an attempt at a manual closing. The Examiner asserts

that the control panel or remote control device, when operated to issue a door closing command, will reflect an “attempt” to close the door. Applicant respectfully submits that the issuance of a command using the close button 518 is not an attempt, but is an actual instruction to close the door.

Finally, Applicant again notes that the claim specifically requires the driving unit to close the door, (1) “**when**” the door movement detection unit detects a movement of the door and (2) “**when**” the judgment unit judges that the door is attempted to be closed. The use of the words “**when**” signifies that two required conditions must be met concurrently. Specifically, there must be a presence of these two inputs to a decision making unit that implements a closure in response to their presence. This is not taught in Cleland et al. In short, even if the Examiner identifies structures that correspond to the two units, there is no operation to close the door in response to the output of both units. While an attempt to close the door by unit 512 may result in closure, the position detecting unit has no role as a condition to closing the door in the disclosure of Cleland et al.

As explained at paragraph [0111], the microprocessor 502 of Cleland et al is constructed and adapted to control the speed and direction of the drive motor 534. The microprocessor may also control the stop structure 204 and strut assembly 28 for several purposes, including stopping movement of the door 18, to effect a change in the rate of movement of the door 18 or to selectively execute portions of the movement sequence of the strut assembly 28. As explained at paragraph [0112], the microprocessor 502 is also configured to compensate for external or environmental conditions, which may affect the performance of the assembly, including external temperature and tilt angle of the vehicle. The patent explains at paragraph [0113], that the input from any of the sensors 206, 506, 508 or 510 allows the microprocessor to alter the performance of the system 500 in accordance with the conditions to which the automobile 10 is subjected. A particular feature of each sensor are explained at paragraphs [0114]-[0115]. As noted by the Examiner in his rejection, the door position sensor 506 can be an angle encoder associated with a hinge assembly.

Applicant respectfully submits that the Cleland et al reference does not teach the automatic closure of a vehicle door in response to the two express and mandatory conditions in claim 1. The importance of these conditions has been explained in the specification and the Examiner would only use hindsight to assert that Cleland et al can be modified to provide door operation in response to such conditions. In particular, with respect to the Examiner's own analysis, there is no teaching that the door will close in response to the operation of the remote unit close button, only if the position sensor is also in operation to detect movement of the door. The claims should be considered patentable.

Claim Rejections - 35 U.S.C. § 103

Claims 5-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Cleland et al in view of Pudney (2003/0216817). This rejection is traversed for at least the following reasons.

The three claims would be patentable for the reasons already given with regard to claim 1, from which these claims depend. Pudney does not remedy this deficiency.

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Cleland et al in view of Flick (2003/0001728). This rejection is traversed for at least the following reasons.

The three claims would be patentable for the reasons already given with regard to claim 1, from which this claim depends. Flick does not remedy this deficiency.

Conclusion

In sum, Applicant relies on the features found in claim 1 as a basis for patentability of all of the claims. In short, Cleland et al does not teach the automatic closure of a vehicle door in response to the two express and mandatory conditions in claim 1 and the issuance of a command using the close button 518 is not an attempt, but is an actual instruction to close the door. That is, a user input unit of Cleland does not correspond to a judgment unit of the present invention, but corresponds to a door switch as described on page 6 line 10 to page 7 line 8 of the application. The supplemental references do not remedy this deficiency in Cleland.

Amendment Under 37 C.F.R. § 1.114(c)
U.S. Application No. 10/649,685

Further, Applicant is adding a new claim 21 to define a function corresponding to the user unit of Cleland.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

/Alan J. Kasper/

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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Alan J. Kasper
Registration No. 25,426